Claims

1-20 (Cancelled)

21. (Currently Amended) A motion controlled handheld device, comprising:

a first accelerometer operable to detect acceleration along a first axis;

a second accelerometer operable to detect acceleration along a second axis, the second axis perpendicular to the first axis;

a tilt detection component operable to detect rotation having a component around at least one of the first axis and the second axis, the tilt detection component comprising:

a first camera operable to generate a first video stream;

a video analysis module operable to detect a direction of motion based on the first video stream;

a range finder operable to determine distance information including a distance between the device and an object in the first video stream, wherein the video analysis module is further operable to determine a magnitude of translation of the device using the distance;

a display operable to present a current image;

a motion tracking module operable to track motion of the device in three dimensions using the first accelerometer, the second accelerometer, and the tilt detection component; and

a controller operable to generate the current image and to modify the current image in response to the motion of the device.

22. (New) The motion controlled handheld device of Claim 21, further comprising a second camera operable to generate a second video stream.

23. (New) The motion controlled handheld device of Claim 22, wherein:

first camera and the second camera are oriented along a same axis and directed in opposite directions; and

the video analysis module is further operable to distinguish between tilt and translation based on the first video stream and the second video stream.

24. (New) The motion controlled handheld device of Claim 21, wherein the motion tracking module is further operable to determine that no significant motion is taking place.

25. (New) The motion controlled handheld device of Claim 21, wherein the motion tracking module is further operable to identify and amplify a dominant motion.

26. (New) The motion controlled handheld device of Claim 21, wherein the motion tracking module is further operable to identify and minimize a minor motion.

27. (New) The motion controlled handheld device of Claim 21:

further comprising a device application configured to generate a graphical user interface that is displayed as the current image on the display; and

wherein the motion tracking module is further operable to select for amplification at least one motion component of the tracked motion of the device and to select for minimization at least one motion component of the tracked motion of the device, wherein the selections are based on the currently displayed graphical user interface.

28. (New) A method for controlling a handheld device, comprising:

detecting acceleration along a first axis;

detecting acceleration along a second axis, the second axis perpendicular to the first axis;

generating a first video stream;

detecting a direction of motion based on the first video stream;

determining distance information including a distance between the handheld device and an object in the first video stream;

determining a magnitude of translation of the handheld device using the distance information;

detecting rotation having a component around at least one of the first axis and the second axis;

generating and presenting a current image;

tracking motion of the device in three dimensions based on the acceleration along the first axis and the second axis, the magnitude of translation, and the rotation; and

modifying the current image in response to the tracked motion of the handheld device.

29. (New) The method for controlling a handheld device of Claim 28, further comprising generating a second video stream.

30. (New) The method for controlling a handheld device of Claim 29:

wherein the first video stream is generated by a first camera and the second video stream is generated by a second camera, and the first and second cameras are oriented along a same axis and directed in opposite directions; and

further comprising distinguishing between tilt and translation based on the first video stream and the second video stream.

31. (New) The method for controlling a handheld device of Claim 28, further comprising determining that no significant motion is taking place.

32. (New) The method for controlling a handheld device of Claim 28, further comprising identifying and amplifying a dominant motion.

33. (New) The method for controlling a handheld device of Claim 28, further comprising identifying and minimizing a minor motion.

34. (New) The method for controlling a handheld device of Claim 28, further comprising:

generating a graphical user interface that is displayed as the current image on the display;

selecting for amplification at least one motion component of the tracked motion of the handheld device; and

selecting for minimization at least one motion component of the tracked motion of the handheld device, the selections are based on the currently displayed graphical user interface.

35. (New) Computer readable instructions encoded in a tangible computer readable medium, that when executed by a processor of a handheld device are configured to:

detect acceleration along a first axis;

detect acceleration along a second axis, the second axis perpendicular to the first axis;

generate a first video stream;

detect a direction of motion based on the first video stream;

determine distance information including a distance between the handheld device and an object in the first video stream;

determine a magnitude of translation of the handheld device using the distance information;

detect rotation having a component around at least one of the first axis and the second axis;

generate and presenting a current image;

track motion of the device in three dimensions based on the acceleration along the first axis and the second axis, the magnitude of translation, and the rotation; and

modify the current image in response to the tracked motion of the handheld device.

36. (New) The computer readable instructions of Claim 35, wherein the instructions are further configured to generate a second video stream.

37. (New) The computer readable instructions of Claim 36, wherein:

the first video stream is generated by a first camera and the second video stream is generated by a second camera, and the first and second cameras are oriented along a same axis and directed in opposite directions; and

the instructions are further configured to distinguish between tilt and translation based on the first video stream and the second video stream.

38. (New) The computer readable instructions of Claim 35, wherein the instructions are further configured to determine that no significant motion is taking place.

39. (New) The computer readable instructions of Claim 35, wherein the instructions are further configured to identify and amplify a dominant motion.

40. (New) The computer readable instructions of Claim 35, wherein the instructions are further configured to identify and minimize a minor motion.

41. (New) The computer readable instructions of Claim 35, wherein the instructions are further configured to:

generate a graphical user interface that is displayed as the current image on the display;

select for amplification at least one motion component of the tracked motion of the handheld device; and

select for minimization at least one motion component of the tracked motion of the handheld device, the selections are based on the currently displayed graphical user interface.